

**Amendments to the Specification**

Please replace the Abstract with the following amended Abstract:

~~Methods, systems, and machine-readable media for processing a sequence of image frames are described. In one aspect, respective~~Respective sets of motion vectors are computed for pairs of image frames. The computed motion vectors are classified into motion classes. Motion clusters are identified in the image frames based at least in part on the motion classes. An identified motion cluster is selected as a motion stabilization reference based on spatiotemporal consistency of the selected motion cluster across multiple image frames.